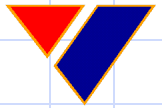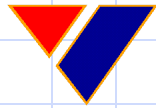# Using Individual-Task Data to Field FORCEnet

By

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# Overview

- FORCEnet HSI/MPT Strategy
- Multiple uses of individual-task data
- Benefits of "re-use" strategy
- "Roll up" of individual task data to mission tasks
- Summary

FORCEnet HSI Strategy

"... In carrying FORCEnet duties and ADDU roles, I place the highest possible importance on the necessity out my CHENG to develop the 21st century Warrior. ... Toward that end, I am standing up, as a member of my Chief Engineer's organization, a cadre to ensure the discipline necessary to bring Human Systems Integration (HSI) principles to FORCEnet is in place..."
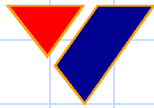
-- RADM Ken Slaght
24 April 2003
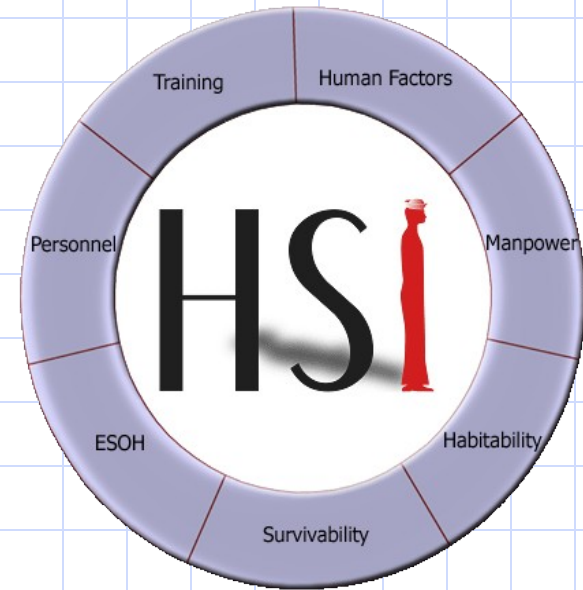
Integrates human capabilities and limitations into...

- **Architecture and Standards**

- **System Design and Development**

- **Test and evaluation**

- **Assessment**

...in a way that optimizes FORCEnet performance under operational conditions
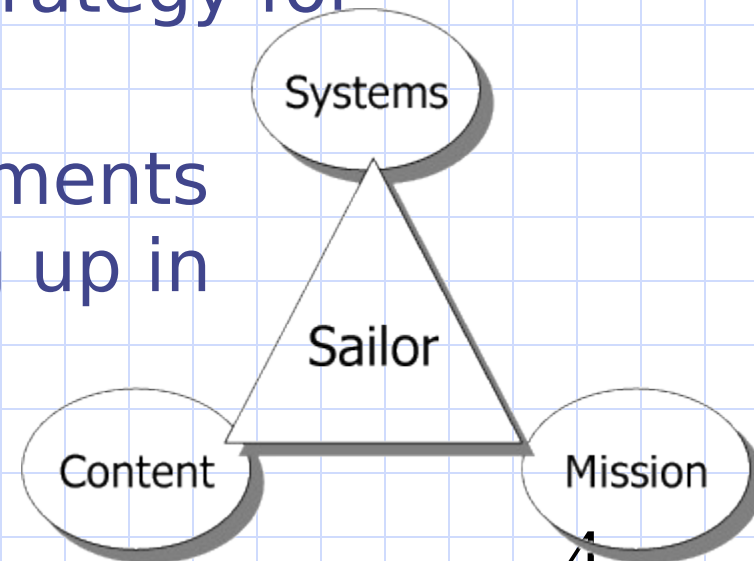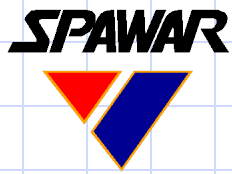
FORCEnet MPT Strategy

◆ Focused on individual-level tasks

◆ Goals:

- Collect C4ISR individual-task data to support product development
- Implement "re-use" strategy for efficiency
- Support C4ISR departments and divisions standing up in the Fleet

Systems

Sailor

Content

Mission

Task Types

- <u>Organizational</u>: Battle Group
  - Mission tasks performed by more than one unit
- <u>Organizational</u>: Unit
  - Mission tasks performed by unit
- <u>Individual</u>: Team
  - Task performed in conjunction with another individual
- <u>Individual</u>: Personal
  - Task performed by an individual

Information Hierarc

Strategic View - Across Missions
Tactical View - Across Systems
Operations View – Across Warfighters

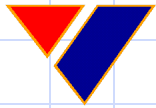| Observe	Decide
Assess	Engage

| Work-Task Details |
| --- |
| Work Products |
| Alternatives &
Explanations |

JTA Structure

- Job Titles—name of workforce assignments to officer and enlisted personnel
  - Duties—major job responsibilities of personnel
    - Tasks—primary activities performed by individuals
      - Subtasks—further breakdown of task activities
        - Procedures—
        - Step 1
        - Step 2
        - Etc.

Multiple Uses of Individual-Task Data

- Human-computer interface design
- Manpower/personnel analysis
- User documentation
- Training design
- Test and evaluation
- Performance assessment
- Program assessment
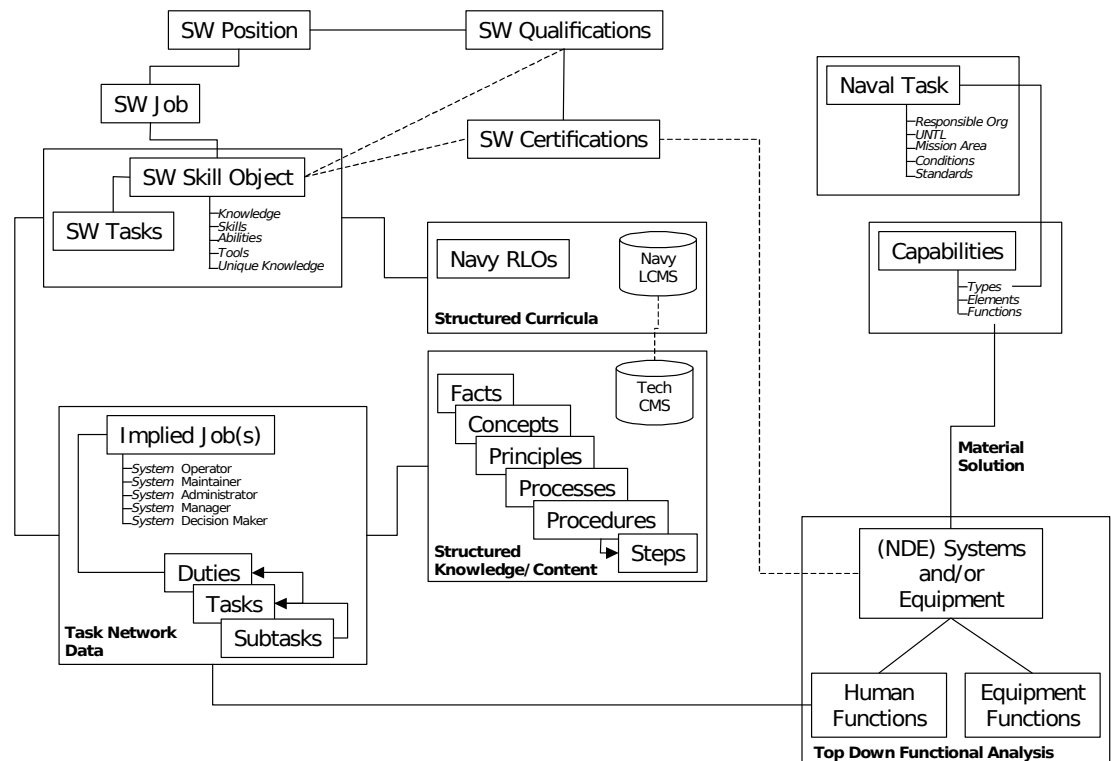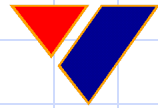
*HCI Design

◆ Hierarchical Structu

JTA Feeds GUI Design

■ Menus

■ Templates/Windows

■ Command Languages

◆ Duties = Top-Level Menus

■ Tasks = Secondary Menus

◆ Subtasks = Tertiary Menus

Task Visualization

Strike Plan Overview

Task Progress*

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*HSI Assessment

Shared Awareness **Speed of Command**

Efficiency of Asset Utilization **Adaptability**

Key Issues – Does it:

- Improve the quality of decision-making?

- Provide usable components and processes?

- Support distributed knowledge management?

- Achieve organization effectiveness?

- Impose acceptable MPT requirements?

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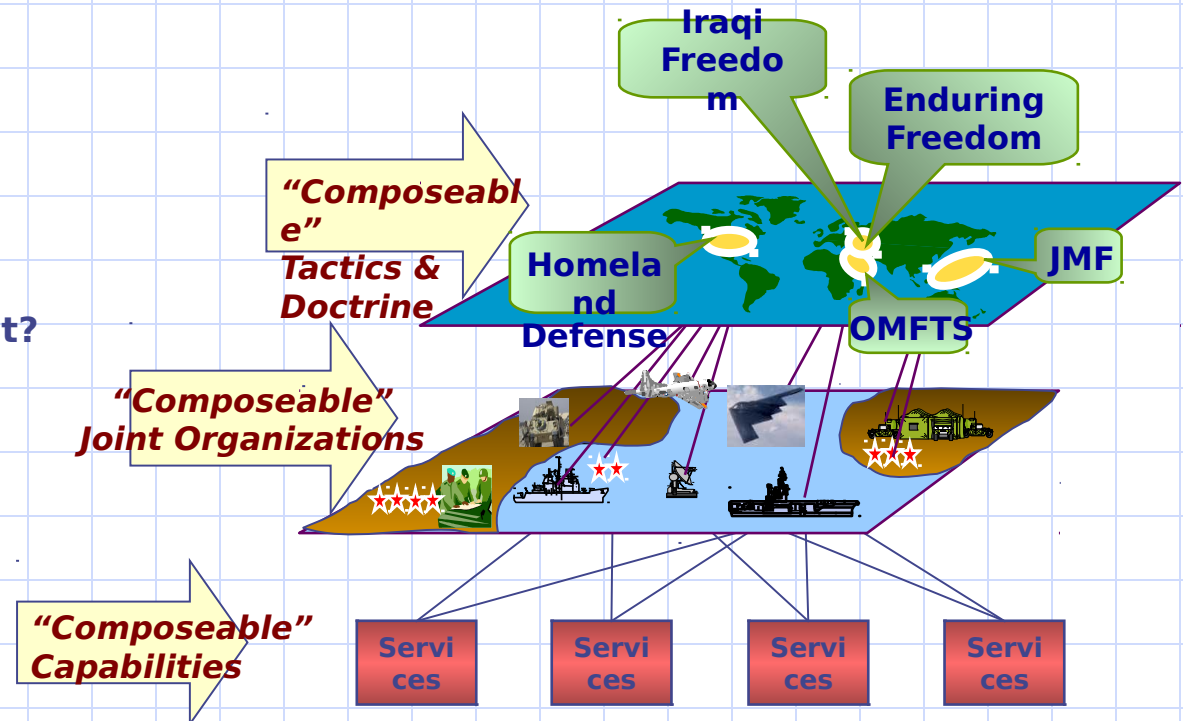
*Technical Documentation

◆ JTA supports structured presentation of technical user information:

- Job/Task Focused
- XML-Repository Based
- Electronic Performance Support System (EPSS)
- Enables drill-down to work procedures and corresponding steps
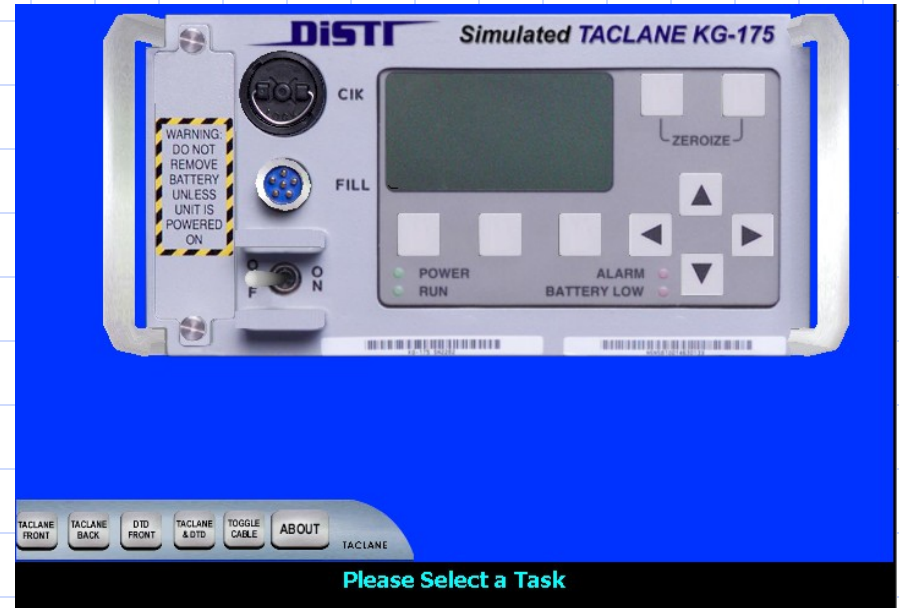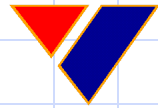
*Training Design

◆ JTA supports curriculum design and development
- ▪ Training task/course of instruction design
- ▪ Reusable Learning Objects
- ▪ LCMS-compatible

◆ Duties = Unit Topics
- ▪ Tasks = Lesson Topics

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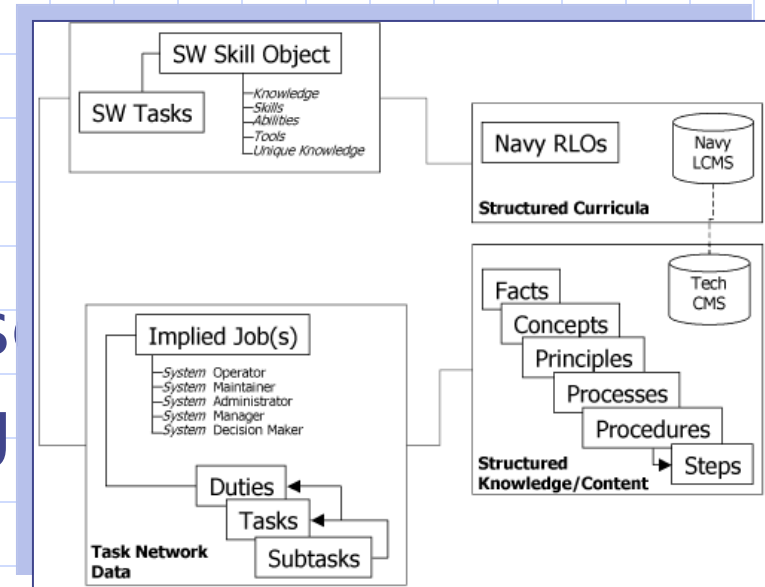
*Test and Evaluation

- ◆ JTA Information Enables Operationally-Focused T&E
  - ▪ Performance categories provide focus
    - ◆ Operator
    - ◆ Maintainer
    - ◆ Administrator
    - ◆ Supervisor
    - ◆ Manager /decision-maker)
  - ▪ Duties usually equate to system functions
  - ▪ Testing of actual tasks is more effective than "button pushing"

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*Performance Assessment

- JTA information provides an excellent basis for testing human performance
  - Tasks/subtasks specify actual work behavior that needs to be assessed
  - Well-written task/subtask statements enable MOE/MOP identification
  - Sequence tasks into Warrior Activity Sequence Diagrams
- FORCEnet HSI Lab – linked to other Navy testing labs
- Include Warfighter activities in thin-thread analyses

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Program Assessment

- ◆ Identify programmatic overlaps and redundancies (e.g., PR07)
- ◆ Include HSI considerations
  - ▪ Cost
  - ▪ Usability
  - ▪ Workload
  - ▪ Training required
- ◆ Job Tasks form the basis of HSI analysis
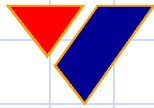
Benefits of Task "Re-Use"

- ◆ Provides common operational framework
- ◆ Enables multi-modal learning and application
- ◆ Improves program effectiveness

Common Operational Framework

- JTA re-use facilitates learning
- JTA re-use contributes to improved situational awareness
- JTA re-use enables the identification of related, or common, activities for consolidation
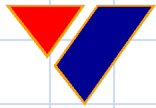
Multi-Modal Learning

- ◆ JTA re-use enables officers and sailors to "see" how information learned in one environment can be transferred, or applied, without training to activities in another environment

- ◆ JTA re-use enables the "reinforcement" of previously learned material by confirming understanding

Improved Program Effectiveness

- Re-use of JTA information contributes to an "integrated" product line
- JTA re-use improves product effectiveness
- JTA re-use provides development cost savings

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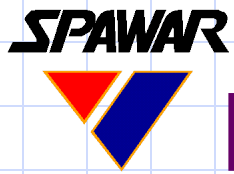
Mission-Task Linkage

◆ Associate MPT Data Directly to NMET

JTA Connection

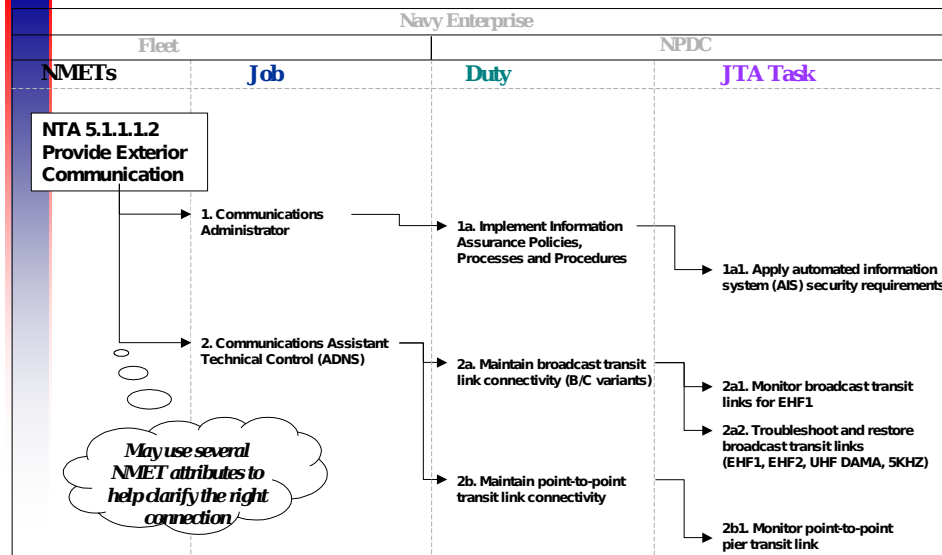| Navy Enterprise			
Fleet		NPDC	
NMETs	**Job**	**Duty**	**JTA Task**

NTA 5.1.1.1.2 Provide Exterior Communication

1. Communications Administrator

1a. Implement Information Assurance Policies, Processes and Procedures

1a1. Apply automated information system (AIS) security requirements

2. Communications Assistant Technical Control (ADNS)

2a. Maintain broadcast transit link connectivity (B/C variants)

2a1. Monitor broadcast transit links for EHF1

2a2. Troubleshoot and restore broadcast transit links (EHF1, EHF2, UHF DAMA, 5KHZ)

May use several NMET attributes to help clarify the right connection

2b. Maintain point-to-point transit link connectivity
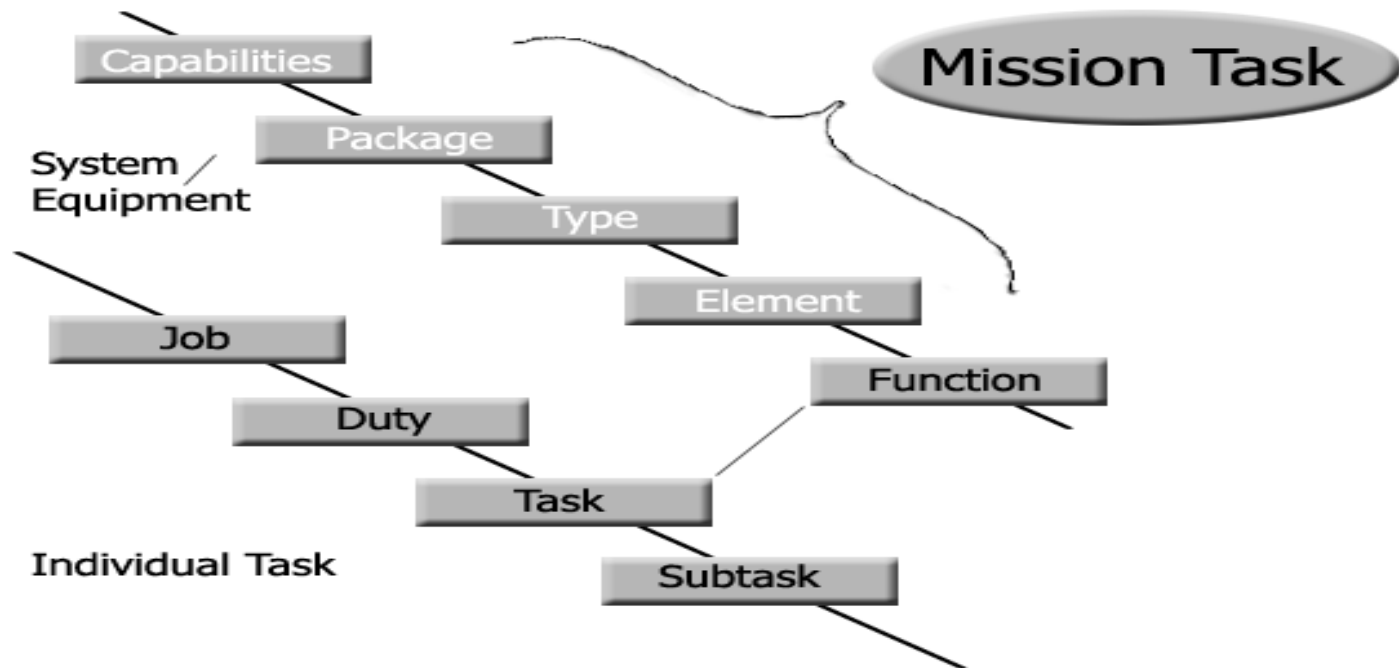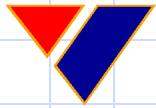
2b1. Monitor point-to-point pier transit link

- 6 -

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Mission-Task Linkage (Cont)

◆ Associate MPT data through system/equipment linkage

Summary

- Implementation of FORCEnet uses individual-task data
- Task data contributes to many types of "products"
- "Re-use" of task data is central tenant of SPAWAR HSI/MPT strategy
- "Roll-up" of MPT data to mission tasks is possible

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